WHAT IS CLAIMED IS:

1. A method of generating ions, comprising the steps of:

heating an ion source material composed of a compound of an element of desired ions to be generated and I, to generate vapor of said compound; and

generating said ions by discharging said vapor.

2. The method according to claim 1, wherein said ions are ions of at least one element selected from the group consisting of B, Al, Ga, In, Ti, N, P, As, Sb and Bi.

3. The method according to claim 1, wherein said compound is InI.

4. The method according to claim 3, wherein the step of heating an ion source material comprises a step of heating said InI at a temperature of not lower than 250℃ and not higher than 380℃, to generate vapor of said InI.

5. A method of irradiating ions, comprising the steps of:

generating desired ions and I ions in an ion generation method according to claim 1; and

selectively irradiating said desired ions onto a substrate to be processed.

6. The method according to claim 5, wherein said ions are ions of at least one element selected from the group consisting of B, Al, Ga, In, Ti, N, P,

As, Sb and Bi.

7. The method according to claim 5, wherein said compound is InI.

8. The method according to claim 7, wherein the step of heating an ion source material comprises a step of heating said InI at a temperature of not lower than 300℃ and not higher than 380℃, to generate vapor of said InI.

9. A filament comprising:

a refractory metal; and

at least one of rare earth elements and rare earth metal oxides contained in said refractory metal.

10. The filament according to claim 9, wherein said refractory metal is W and at least one of said rare earth elements and said rare earth metal oxides is selected from the group consisting of Re, La, Ce, Y, Re oxides, La oxides, Ce oxides and Y oxides.

11. The filament according to claim 9, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is Re, and said Re is contained in said W at 1% or more and 26% or less.

12. The filament according to claim 9, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is an oxide selected from the group consisting of La oxides, Ce oxides and Y oxides, and a content of said oxide is

5% or less.

13. An ion generation apparatus, comprising:

a chamber formed in a shape of a casing;

a gas introduction section for introducing gas to generate plasma into said chamber;

a filament according to claim 9, arranged in said chamber;

a plasma generation section for generating desired ions by generating said plasma of said gas with thermoelectrons emitted from said filament; and

an ion outputting section for outputting the ions generated in said chamber outside said chamber.

14. The apparatus according to claim 13, wherein said refractory metal is W and at least one of said rare earth elements and said rare earth metal oxides is selected from the group consisting of Re, La, Ce, Y, Re oxides, La oxides, Ce oxides and Y oxides.

15. The apparatus according to claim 13, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is Re, and said Re is contained in said W at 1% or more and 26% or less.

16. The apparatus according to claim 13, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is an oxide selected from the group consisting of La oxides, Ce oxides, Re oxides and Y oxides, and a content of

said oxide contained in said filament is 5% or less.

17. An ion irradiation apparatus, comprising:

an ion generation apparatus according to claim 13; and

an irradiation chamber which is provided outside said ion generation apparatus and in which ions discharged through an opening portion formed on said ion generation apparatus are irradiated onto a substrate to be processed.

18. The apparatus according to claim 17, wherein said refractory metal is W and at least one of said rare earth elements and said rare earth metal oxides is selected from the group consisting of Re, La, Ce, Y, Re oxides, La oxides, Ce oxides and Y oxides.

19. The apparatus according to claim 17, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is Re, and said Re is contained in said W at 1% or more and 26% or less.

20. The apparatus according to claim 17, wherein said refractory metal is W, at least one of said rare earth elements and said rare earth metal oxides is an oxide selected from the group consisting of La oxides, Ce oxides, Re oxides and Y oxides, and a content of said oxide contained in said filament is 5% or less.

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